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BOX ITEM

26

THE ALLEN SURGICAL PUMP.

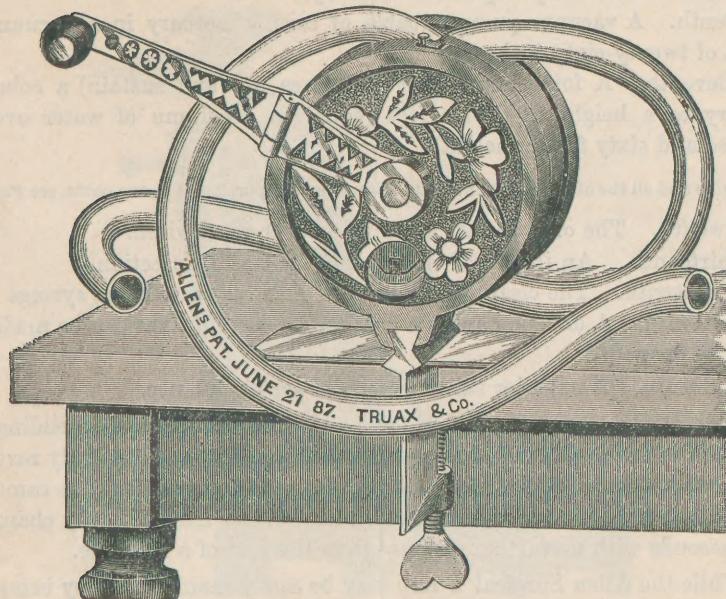


Fig. 1.—Showing the Pump attached to a Table.

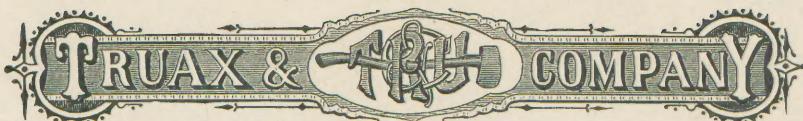
By means of suitable attachments it forms an Aspirator, Injector, Stomach Pump, Bladder Syringe, Cupping Pump, Dilator, Universal Syringe, Breast Pump, and Force and Vacuum Pump, all combined in one instrument (see outfit No. 12, Fig. 78).

With our improved attachments we claim for this pump:

First. The most powerful, rapid, safest and only aseptic aspirator in use.

Second. The only injector that can be used without admitting air with the fluid injected.

Third. The most effective stomach pump in the market.



Fourth. A safe bladder Syringe that may be used with an ordinary catheter.

Fifth. A reliable cupping pump of great power.

Sixth. A dilator (uterine, rectal, vaginal, etc.) superior to any.

Seventh. A tamponning or plugging instrument for arresting haemorrhage.

Eighth. A universal syringe without valves, giving a steady, uniform current.

Ninth. A breast pump that will always work.

Tenth. A vacuum pump capable of raising mercury in a vacuum to a height of twenty-eight inches.

Eleventh. A force pump that will force up (and sustain) a column of mercury to a height of twelve feet (equal to a column of water over one hundred and sixty feet in height).

(A pump and all the above-mentioned attachments can be purchased in one outfit, see Fig. 73.)

Twelfth. The only perfect blood transfuser yet devised.

Thirteenth. An improved instrument for Rectal injection.

Fourteenth. The cleanliest and most effective embalming syringe made.

Fifteenth. A douche having a continuous current that can be made slow or fast as desired.

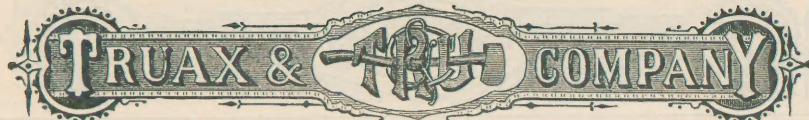
Sixteenth. A superior saliva evacuator for dental use.

It is at the same time both a force and a vacuum pump, depending only on the direction in which the crank is turned, possesses an instantly reversible current, is without valves or stop-cocks, and so arranged that the same tube need not be used for a second operation, as the tube may be easily changed in a few seconds with no further expense than the cost of a new one.

While the Allen Surgical Pump may be easily manipulated by being held in the hand, or attached by means of the clamp to a table, it can be worked to the best advantage by being fastened to the top of a chair-back or to one of its side rails. When attached to a chair, the chair may be moved about as occasion may require, placed against a bed or sofa, or in close proximity to the patient, wherever situated. The clamp being provided with two faces, admits of its being attached in almost any position.

A professor of surgery in one of the leading medical colleges in New York, when showing this pump to his class recently, said: "The chief merit of this instrument lies in the fact that it so completely fulfills the requirements of modern aseptic surgery."

The following is copied from the official report of the Army Medical Delegate from England to the Ninth International Medical Congress, held at Washington, D. C., September 3, 1887:



Romaine Chap 65 v 15 p 27

"**ALLEN'S SURGICAL PUMP.**—One of the best things exhibited at the American Medical Congress was this invention.

"When using the apparatus it is only necessary to recollect that it is at the same time both a force and vacuum pump—the force pump being that end towards which the crank is turned, the opposite being the vacuum. It is easy to see that, by the addition of a few details, the pump, *the action of which can be at once reversed or made to move either way with equal facility*, can be applied to numerous purposes. For instance, it can be used with trocars and canulas in the surgical treatment of empyema, in dilating the urethra or uterus, in transfusion of blood, in cupping, as a lithotomy evacuator, or as a stomach pump or enema



Fig. 2.—Showing the Pump attached to a Chair.

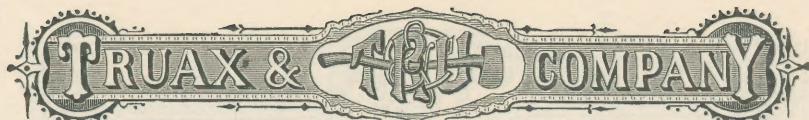
syringe, and so on. It is difficult to describe without the aid of plates, but the principle of its action seems so simple and certain that it cannot fail to attain the various objects to which it can be applied.

"It will be seen that as this very useful and ingenious invention is capable of fulfilling so many purposes, for each of which at the present time a separate instrument has to be provided, it should prove an eminently useful appliance for army purposes; indeed, speaking from my own personal knowledge of it, I do not see what further provision a surgeon would require to meet all the ordinary, and some even of the extraordinary, requirements of practice. The only improvement that I could suggest would be a more durable tubing, and some device or method by which one and the same connector could be used for a variety of purposes*—indeed, for all the purposes to which the pump can be applied. Sir Thos. Longmore, C. B., and many others to whom I have shown it, appreciate its merits, and I understand that Mr. Lawson Tait has sent for one, as he considers it well adapted to his requirements in abdominal surgery.

(Signed.) J. A. MARSTON,

Dept'y Surg. General (British Army)."

*These wants were supplied before the above article was printed.—CHAS. TRUAX & CO.



"On August 10th, at the Obstetrical Section, a demonstration of the uses of the Allen Surgical Pump was given by Mr. Charles Truax, 75 and 77 Wabash Avenue, Chicago, who briefly but clearly showed how, by the use of his improved attachments, this simple instrument could be used successfully for a great many different purposes. He first attached glass cuppers to it, showing how it acted as a cupping pump. Then, by a universal connector, he converted it into an aspirator, with a reversible current, thus admitting of its being changed to an injector without either disconnecting any of its fittings or withdrawing the needle. Easily made changes, converted the same pump into a stomach pump, bladder washer, dilator, syringe, blood transfuser, feeder for insane patients, etc. Many of his demonstrations elicited considerable applause."—*The British Medical Journal*, August 25, 1888.

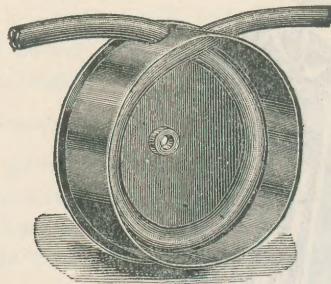


Fig. 3.—Showing the rubber tube coiled within the cylinder.

This device consists of a metal cylinder, upon the inner surface of which is coiled a single loop of rubber tubing, formed in the center of a piece a yard or more in length (see Fig. 3). A shaft having a suitable crank passes through the cylinder, to which is attached a roller provided with springs so

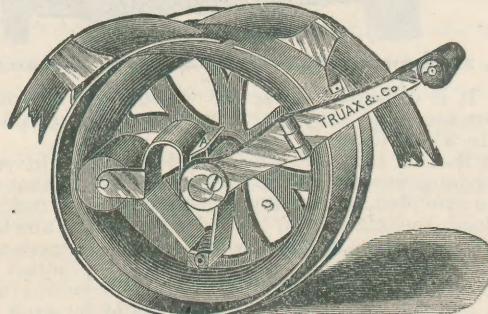


Fig. 4.—Showing the action of the roller.

arranged that any degree of pressure desired can be made by it on the tubing (see Fig. 4). By properly adjusting the springs each revolution of the crank will displace as much air or liquid as is contained in that portion of



the rubber tubing forming the loop. As the roller in passing around the circle must rest on the tubing, completely closing it at some point, there is no necessity for any valves. If one end of the tubing be attached to a vacuum bottle and the crank turned so as to force the air in the tubing in the opposite direction, a powerful vacuum will soon be formed; or if the same end be attached to an air receiver and the crank turned toward it, a high pressure of condensed air will be obtained. This apparatus is adapted for pumping both gases and liquids, and is either a force or vacuum pump, depending only on the direction in which the crank is turned. It has no valves or stop-cocks, and the current may be instantly reversed. It has sufficient power to force a column of water to a height of one hundred and sixty feet, maintaining it at that height, and the next to the smallest size will easily pump one quart of liquid per minute.

There are no delicate or complicated parts to get out of order. The rubber tubing will not wear out, and should it deteriorate after a few years' use, it may be replaced at the cost of a few cents. Our best outfits are supplied with duplicate tubes, so that the surgeon may be provided with one for septic and another for aseptic use.

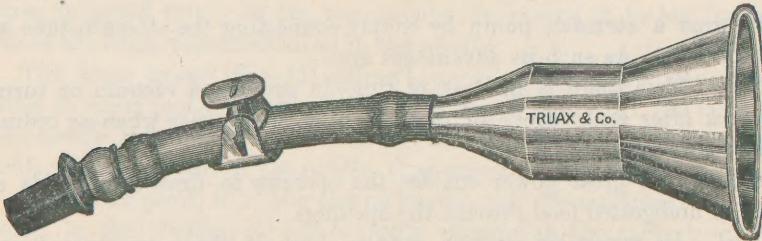


Fig. 6.—Showing Copper with Connector and Cut-off.

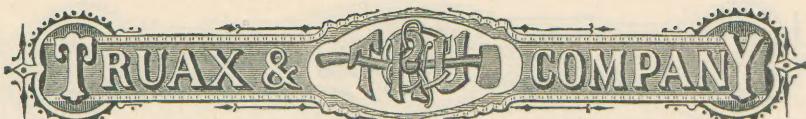
CUPPING.

In order to demonstrate its suction power, the copper, connector and cut-off may be attached, and the copper placed against the hand, temple or other portion of the body. Then by turning the button at the back of the pump, pressure may be exerted upon the roller, the crank revolved, and a



Fig. 7.—Uterine Copper.

vacuum produced in the tube and glass copper. This pressure is the same force used in aspirating, and in evacuating the contents of the stomach. It is sufficient to completely collapse the tubing, and will, if properly attached, raise



mercury in a vacuum to a height of 28 inches. Each complete outfit is provided with a set of five cuppers, with connectors, so that several of them may be, if necessary, attached at the same time. In addition to this, there is in each outfit a uterine copper, suitable for cupping the cervix, or for extracting the slough from a lanced carbuncle.

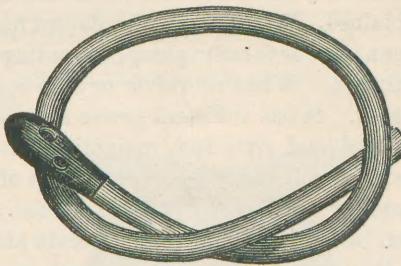


Fig. 9.—Stomach Tube.

STOMACH PUMP.

It forms a stomach pump by simply connecting the stomach tube with the instrument. As such its advantages are—

First. That there is no loss of time in creating a vacuum or turning a stop-cock after each stroke of the piston, as is the case when an ordinary stomach pump is used.

Second. Its great power enables the operator to draw semi-solids and particles of undigested food through the openings.

Third. Its reversible current enables him, if these openings become clogged, to reverse the crank and free them.

Fourth. It may be used for washing out the stomach, and diluting its contents by simply placing the free end of the instrument in a basin of water and reversing its current, thus filling up and evacuating the stomach as often as desired.

It may be used successfully in treating diseases of the stomach, and in all other work of this class.

ASPIRATOR.

To convert this pump into an aspirator it is only necessary to connect (Fig. 10) with rubber tubing the piece of small glass tubing, two-way stop-cock, and dome trocar, and attach them to the pump, when the instrument is ready for work. A careful operator will introduce the needle slowly, while his assistant is turning the crank, in order that, as the needle enters the tissues, a vacuum may be created in the tubing. The moment the cavity is tapped, if it contains fluid, this vacuum produces an instant flow, as will be seen by observ-



ing the small piece of glass tubing that is contained in the tube near the stop-cock. Through this piece of glass tubing the operator may observe the color and density of the passing fluid, and it also enables him to observe if at

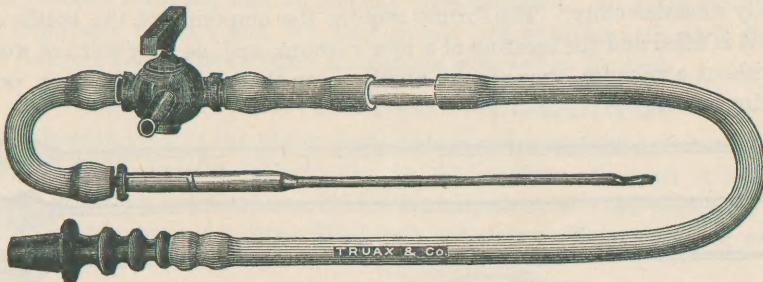


Fig. 10.—Showing Aspirating Attachments.

any time the flow becomes stopped, either from the exhaustion of the supply, or the occluding of the needle. After tapping the cavity, if the operator desires to avoid injury to the tissues that lie beyond it, he has but to push forward the dome point contained in the needle.

The dome trocar (Fig. 11) differs from an ordinary aspirating needle in having an inner probe-pointed canula, so arranged that, after the introduction of the needle into the cavity, this dome point may be pushed forward until it shields the sharp point of the needle, thus preventing its further progress.

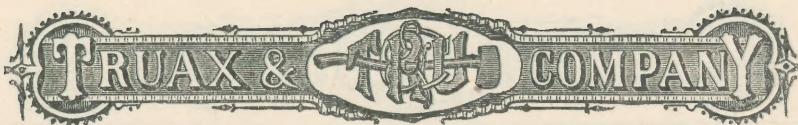
This dome point, if in the pleural cavity, will prevent injury to the lung tissues; in the bladder, it will not only accomplish the same result, but it will prevent its becoming transfixed, for as the bladder contracts under the



Fig. 11.—Dome Trocar.

influence of the escaping urine it must necessarily press down upon the point of whatever needle has been introduced. If the point of the needle is sharp, the opposite wall may press so far over it as to close up its entrance, conveying the impression that the contents of the cavity have been exhausted. This dome point also enables the operator to move the needle about in the cavity, thus withdrawing its entire contents, something that cannot be accomplished with a sharp pointed instrument.

Our plain aspirating needles (Fig. 12) may be introduced into the bladder with a fair degree of safety, as they are shaped so as to cut like a flat trocar, there being no danger of punching or cutting out the small piece enclosed by the rim or edge of the circular needle.



The aspirators heretofore in the market either necessitate the use of a vacuum bottle, or require the turning of a stop-cock every time the cylinder is filled. The latter work slowly, have valves that are easily clogged, and are usually unsatisfactory. The former require the emptying of the bottle every time it is filled and the creating of a new vacuum, and, as they will not work at all without a vacuum, they require an air pump that will always be in perfect working order.

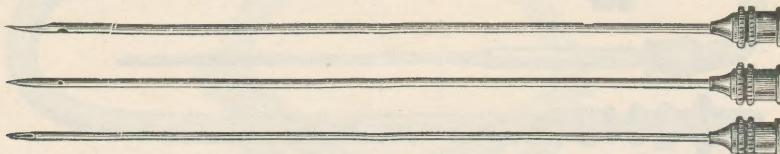


Fig. 12.—Plain Aspirating Needles.

As the Allen Surgical Pump possesses no piston (requiring frequent packing) valves or stop-cocks, and, as it is used without a vacuum bottle, both the time usually employed in producing the vacuum and in emptying the bottle is saved.

Its advantages as an aspirator are:

First. Its great power enables the operator to use a smaller sized needle than he otherwise could.

Second. Its reversible current enables him, if the needle becomes clogged, to reverse its action, and force out the occluding substance.

Third. There is no loss of time in operating it, as there is no vacuum bottle to be exhausted. The instrument commences to work as soon as the crank is turned, and continues to do so without interruption.

Fourth. The pressure or power exerted may be always the same, and is constantly under the control of the operator, and may be made weak or strong, as desired. In using an ordinary aspirator, a vacuum must first be created in the bottle: as fast as it fills, the power decreases, and when the bottle is full, it must be disconnected, emptied, and a new vacuum created. If the aspirator fails to work properly, much delay and annoyance is encountered, all of which is avoided when using the Allen Pump.

ASPIRATOR CHANGED TO AN INJECTOR.

If the operator desires to inject, and wash out the cavity (while his assistant is still turning the crank and creating a vacuum), he has but to turn the stop-cock and close the opening to the needle; the free end of the tube may then be placed in the fluid to be injected, and the current reversed. This will force the air out at the side opening of the stop-cock, and permit the cleansing of the tube. If a quantity of the fluid be forced through this opening, and the current continued until it passes freely and without air



bubbles, the stop-cock may then be turned as before, and the cavity injected, with a positive certainty that no air has been admitted. In many cases this is an important feature, and one that should not be under-estimated, for it can be accomplished with no other instrument ever before devised.

TAMPONNING AND PLUGGING.

By attaching one of the rubber bags, this instrument forms a tamponning or plugging outfit superior to any other in the market. As such it may be used for arresting haemorrhage by the introduction of cold water, or for reducing inflammation by being filled with hot water. This supply of water

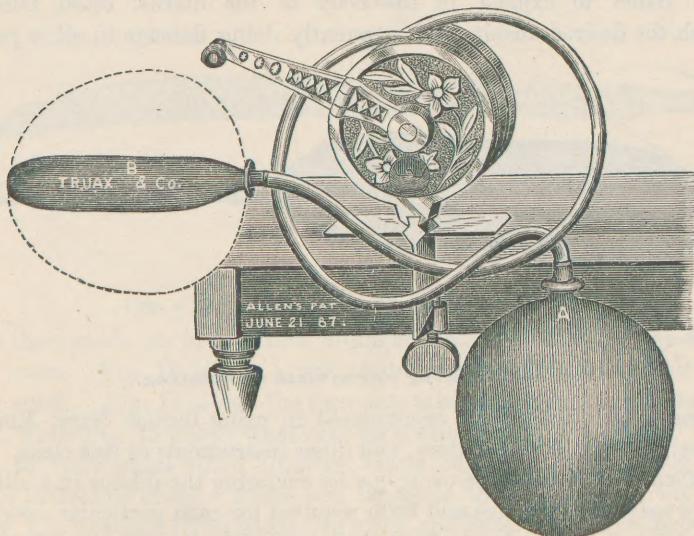
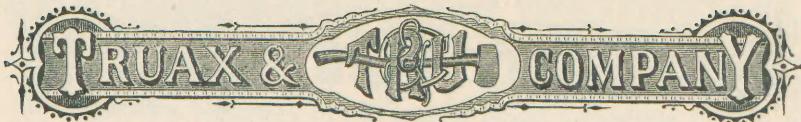


Fig. 14.—Showing how the contents of one Tampon may be transferred to the other.

may be introduced, evacuated, and again introduced as often as its temperature changes, remembering that the same number of revolutions that will expand the bag to a certain size before introduction, will accomplish the same result afterwards. If, however, the operator desires to avoid over-distention and accurately measure the amount of dilation produced, he has but to attach one of the rubber bags, and expand it to the size desired. Then attach to the other end of the instrument the bag which he desires to use in the operation, introduce it, reverse the current, and force the contents of the first one into the second, after the second one has been introduced. These bags may be introduced directly into the body of the uterus in many cases, and they may be used in the vagina, rectum, and other cavities of the body. Fig. 14 shows the pump with two tampons attached.



DILATOR.

This apparatus may be made available in dilating the cervix uteri, and with our improved dilator forms an effective, durable and economical instrument. It consists of a slightly curved tube having perforations near the center and ending in a small bell-shaped tip. Over this is stretched a rubber cover tightly fastened. This cover can be expanded into a ball several inches in diameter, and is of sufficient strength to accomplish any work required.

Bags of this character are, however, objectionable, because they expand at points of least resistance. If introduced into the cervical canal they are liable to expand in the body of the uterus, often failing to accomplish the desired result, and frequently doing damage to other portions

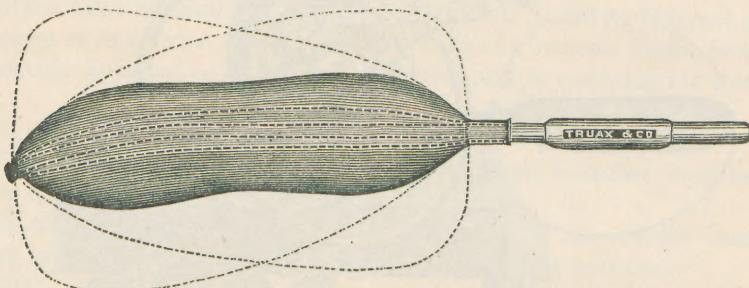


Fig. 16.—Showing our system of Dilating.

of the organ. This difficulty is encountered in using Barnes' Bags, Emmet's Water Bags, Molesworth's Dilators, and other instruments of this class. This serious difficulty may easily be overcome by enclosing the dilator in a silk bag. These bags may be of the size and form required for each particular operation. They may be manufactured of ordinary silk, and the physician can have them made at home for each special case. When drawn over a rubber dilator they confine the power of the instrument within prescribed limits, thus producing a dilator of great power. Its advantages are, that it presents the same amount of force to every portion of the cervical canal, and dilates equally in all directions. The consequence is that it will produce a given amount of dilation (and the amount is regulated by the size and shape of the bag used), more speedily, with less shock to the system, with less danger of laceration, and with less tendency to inflammation than any other form of dilator. Its action is rapid, certain and effectual, and the extent of its dilation positively known. While very firm, it is yet yielding enough to avoid injury to parts with which it may be brought in contact; and if dilated with water, and a cut-off attached between it and the instrument, it may be left in position for any length of time.



These bags can be purchased from us at from 50 cents to \$1.00 per dozen, and in an emergency, the physician can use a good quality of finger cots, pieces of pure gum tubing, or the ordinary rubber balloon bags, such as are sold on the streets as toy balloons.

We manufacture an extra small sized dilator, for cases of stenosis, and are prepared to furnish special ones to order. Although we furnish two sizes of these silk sacks with each dilator the physician will find it preferable

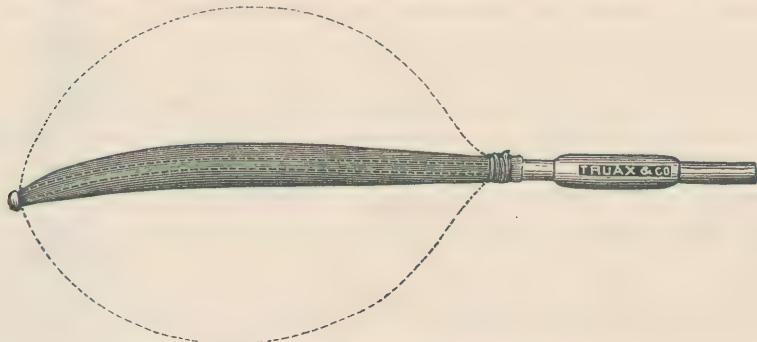


Fig. 17.—Showing a plain Rubber Dilator.

to have them made at home from ordinary silk, thus meeting the wants of special cases. Fig. 16 shows a few of the shapes most commonly used in general work. Fig. 17 shows the form the tube will take if not enclosed in a cover, while Fig. 16 shows what may be accomplished with them. We also furnish to order extra small Dilators, either curved or straight, to suit the wants of individual cases. These can be made to do service in the Urethra (see Fig. 19), Trachea, Esophagus, Anterior and Posterior Nares, Rectum, and in fact in any natural or artificial cavity of the body. The dilating portion may be lessened or increased to suit the necessities of each case, so that the



Fig. 19.—Showing a Slender Dilator.

Dilator may be made to expand at its whole or a portion of its length. Dilators made in this manner may be used in many cases of stenosis, in replacing and retaining in position the turbanated bodies, and for use in cases of epistaxis.

BLADDER WASHER.

For washing out the bladder, it is only necessary to attach a web catheter of good quality, placing between the catheter and the pump a piece of soft pur-



gum tubing, the use of which will be explained later. The bladder should first be emptied by means of a catheter. Before introducing the catheter that is attached to the instrument, the free end of the pump should be placed in the fluid to be injected, the crank turned, so that the rubber tube and catheter may be filled with the fluid, and the air entirely expelled from them. Then, after the catheter is introduced the first revolution of the crank will inject as much fluid as one loop of the tubing will hold. By measurement we have ascertained that when using our No. 2, or $3\frac{1}{2}$ inch Pump, two and one-half revolutions of the crank inject an ounce, and, therefore, if the operator desires to introduce four ounces of fluid, he may accomplish it with ten revolutions of the crank. As the opening of the catheter is small, these revolutions should be made slowly, in order to avoid producing an undue force of the current as it passes from the catheter. The measuring of this fluid as it passes is of considerable importance, as it enables the operator to know exactly the quantity of fluid passed at any moment, so that if the patient complains at any time during the operation, he knows the quantity of fluid that produces the uncomfortable sensation. In evacuating this fluid the operator has but to reverse the action of the crank, carefully guarding against one thing, and that is, the drawing of the mucous folds into the eye of the catheter and causing irritation. If this complication arises, it will instantly produce a collapse of the soft piece of tubing before mentioned. To relieve this pressure, the operator has only to give the crank one or two turns in the opposite direction, remove the suction caused by the vacuum, and turn the eye of the catheter away from the wall of the bladder by simply rotating it part way round, after which the evacuation may be continued with safety. The advantages of this instrument are—

First. The injection of fluid without the introduction of air.

Second. Accurate means of measuring the amount of fluid injected.

Third. The distending of the bladder, causing a complete irrigation.

Fourth. The withdrawing of the fluid without danger of injury to the mucous lining.

Fifth. The using of a catheter that may be either new and aseptic, or easily made aseptic. It is well known that a double channel catheter is usually the most uncleanly instrument in a physician's armamentarium; and when introduced, unless it be plugged or otherwise stopped up, only irrigates that portion of the bladder surrounding the eyes of the instrument.

SYRINGE AND DOUCHE.

The advantages of this invention when used as a syringe or douche are too apparent to require a lengthy discussion. The current can be made as fast or slow as desired; it is smooth, even and free from air bubbles. By using



a longer piece of rubber tubing the patient may operate it by holding it in one hand, drawing the fluid from a pail or basin on the floor. It will never get



Fig. 23.—Set Universal Syringe Pipes.

out of order, and will always be ready for use. Each No. 12 Outfit (see Fig. 73), is supplied with five syringe pipes: rectal, vaginal, uterine, ear, and post-nasal, so that the physician has all the advantages of a universal syringe.

BREAST PUMP.

As a breast pump it acts easily and perfectly, and as such possesses advantages over all ordinary instruments of this class.

The nine instruments, or sets of instruments, described in the foregoing pages—Cupper, Stomach Pump, Aspirator, Injector, Tamponning and Plugging, Dilator, Bladder Washer, Syringe and Douche and Breast Pump, with the necessary attachments, together with a No. 2 pump, are all included in one outfit. See Fig. 73.

BLOOD TRANSFUSER.

As a blood transfuser it possesses important advantages not found in any other instrument, and is practically the only perfect one in use. For this purpose we manufacture a special instrument having a small tube of pure rubber. If the operator desires to maintain the blood, while *in transitu*, at or near its normal temperature, he may place the pump, while in use, in a basin or vessel of water having a temperature of about 105° F. As there are no valves or stop cocks, and as the blood while being transfused may be kept moving at the same rate of speed as when in the veins, there is but little liability of any change taking place, and consequently no necessity for defibrillation. It is not brought into contact with the air, and there is but little if any danger of coagulation.

As the Allen pump itself is only the means of freeing the tubing from air and properly propelling the blood, almost any form of canula may be used in



connection with it. In order to simplify this operation, we furnish a plain canula (see Fig. 26).

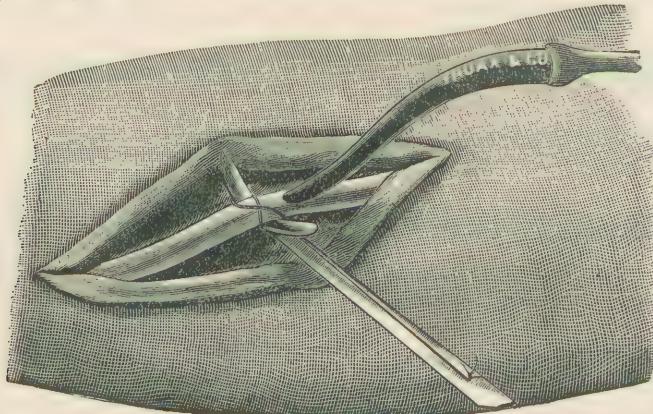


Fig. 26.—Showing Transfusion Canula and Canula Pin.

After the two canulas have been attached to either end of the pump, one of the canulas may be placed in a vessel of saline solution and the crank turned until all the air has been expelled from the tube and the latter thoroughly cleansed. A vein of the blood-giver may then be opened by means of the proper operating instrument, assisted by the * Phlebotome (see Fig. 27), and the free canula introduced. This introduction may be made through a small opening, provided an assistant will revolve the crank of the pump with a speed that is only sufficient to produce a dropping of the saline solution from the point of the canula. This dropping of the saline solution not only prevents the coagulation of blood within the tube, but it washes it away from the wound and prevents the introduction of air into the tube. As soon as the canula has been passed into the vein the further turning of the crank should be stopped and the canula securely fastened by means of the * Canula Pin (see Fig. 26), after which the remaining canula may be removed from the saline solution



Fig. 27.—Jennings' Phlebotome.

and introduced into a vein of the receiver in a similar manner. By simply reversing the action of the crank, fresh blood will be drawn from the giver to take the place of the saline solution as fast as the latter is forced from the tube into the vein of the receiver.

* These two instruments were designed by Mr. Jennings, F.R.C.S., Eng. M. S.

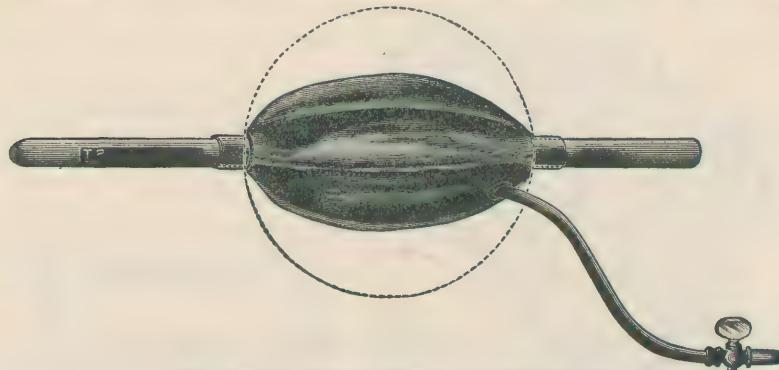


Fig. 28.—Rectal Injector and Obturator.

This attachment to the Allen Surgical Pump is the invention of Dr. David Prince, of Jacksonville, Ills. It consists of an inflatable rubber bag surrounding a hollow flexible bougie (see Fig. 28). The bougie and bag, while the latter is in a collapsed condition, may be introduced into the rectum, after which the bag may be attached to the pump and filled with water until dilated to the required size, after which the pump may be connected with the bougie and the rectum filled with fluid. It may be used in raising the floor of the pelvic viscera in laparotomy and other supra-pubic operations, in injecting large quantities of water into the alimentary canal in cases of obstinate constipation, intussusception or strangulation; for holding large quantities of fluid foods in the alimentary canal; and for diluting the blood or reducing the temperature by the introduction of water.

HOT AND COLD WATER APPLICATIONS.

As may be seen by the following illustration, it is only necessary to connect a suitable bag with sufficient tubing to convert this pump into a valuable instrument for making applications of water both hot and cold, either of which may be maintained at a given temperature for any desired length of time. In applying ice water both the end of the tubing leading to the pump and the end leading from the water bag may be placed in the vessel containing the broken ice and water. The bag may then be placed in position upon the affected parts, the stop-cock closed and the bag filled with the ice water by simply turning the crank. The thermometer shown in the illustration projects into the center of the bag, and as it is not self-registering it shows both the falling and rising of the temperature. As soon as the absorption of heat causes the mercury in the thermometer to rise above the desired standard the stop-cock may be opened and the crank again turned until the warm water has been replaced by that having a lower temperature.

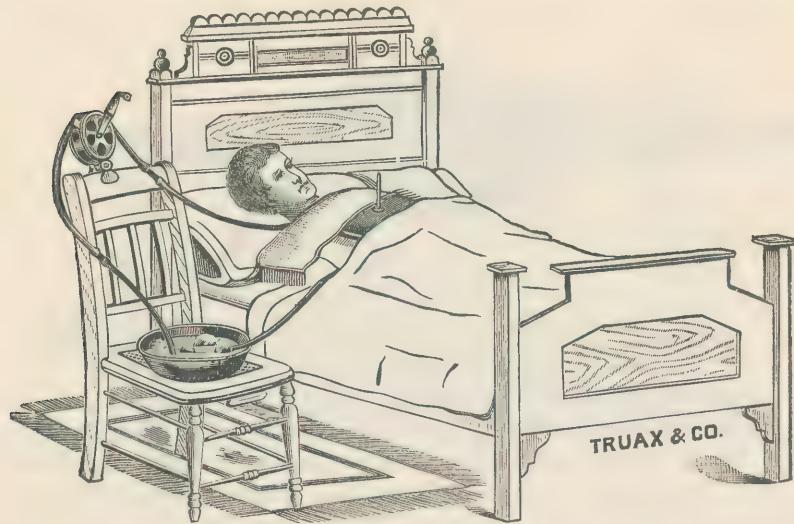
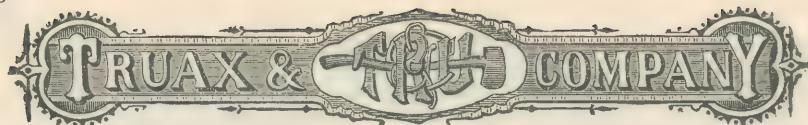


Fig. 30.—Hot and Cold Water Bags.

Hot water may be applied in the same manner and its temperature carefully ascertained by the same thermometer. The only difference in the attachments being the placing of the outlet tube in a second vessel.



Fig. 34.



Fig. 36.



Fig. 38.

These bags are manufactured of various sizes and shapes, those usually furnished being for use on the abdomen (Fig. 30), chest (Fig. 30), neck (Fig. 34), spine (Fig. 36) and head (Fig. 38). They are made of pure gum rubber,



so that they are not only soft and light, but they will readily conform to the inequalities of the surface to which they are applied.

They will be found in connection with the pump to be superior to any other system in use for this purpose, because with them a uniform temperature may be maintained and the patient freed from the dangers and annoyances caused by the frequent changing of the ordinary bags, clothing, etc. The clothing when once adjusted over the bag and around the thermometer need not be disturbed, and hours of rest secured that might otherwise be broken.

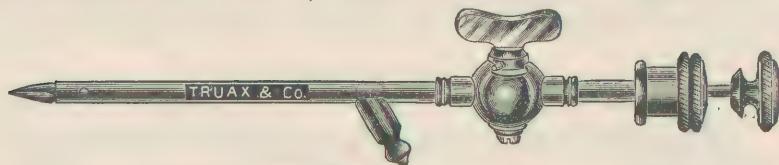


Fig. 40.—Aspirating Trocar and Stop-Cock.

The advantages possessed by an Aspirating Trocar lie in the fact that as the needle or puncturing point is formed of a separate piece of metal from the canula the latter can be manufactured from tubing having a much thinner wall than it otherwise could, thus furnishing the greatest possible internal caliber or suction space as compared with the size of the wound produced by the introduction of the instrument.

During the year 1888 at the Royal Naval Hospital, Gosport, Eng., a series of experiments with instruments of this class were made by the Fleet Surgeon of the British Navy, Mr. Walter A. Reid, who, after repeated trials pronounced the Allen Surgical Pump Outfit, see page 32 (containing a set of these trocars), the most perfect aspirator in use. The trocar may be attached to the pump and introduced in the same manner as an ordinary aspirating needle, after which the crank may be revolved, the trocar withdrawn and the stop-cock closed, thus avoiding the introduction of air into the needle or cavity.



Fig. 42.—Curved Dome-Pointed Trocar for Ovarian Cysts.

These large dome-pointed trocars we have constructed for use in removing the contents of large cystic tumors, particularly those of the ovaries. Besides the ovarian trocar shown in the illustration we manufacture two smaller sizes



of the same length and curve (Nos. 9 and 15, Eng. scale) for use in instances where a straight trocar is not admissible.

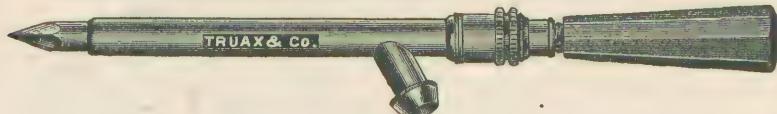


Fig. 44.—Emmett's Trocars, three sizes.

These trocars are manufactured in sizes both for ordinary aspirations and for ovarian use. They differ from Fig. 40 in not having a stop-cock and being nickel plated.



Fig. 46.—Uterine Douche.

This instrument has already proved itself useful in the hands of nearly all who have given it a trial, whether used with a common syringe or with the Allen Surgical Pump. With the latter it becomes doubly valuable because of the ease with which it may be operated, the smooth, even current it produces, and the fact that no air can be drawn into the current.



Fig. 48.—Esophageal Dilator.

These dilators are made in two sizes, adult's and child's, both of which are supplied with rubber bags and silk covers, and like our uterine dilators described on page 10 may be dilated to any desired shape or size.

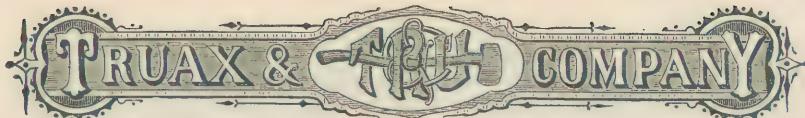


Fig. 50.—Trachea Dilator.

For treating cases of stenosis of the trachea we have constructed some catheter-like canulas open at the end and having an external small metal tube, by means of which the rubber bags are dilated. The catheter admits of the passage of air, so that respiration is not interfered with during the process of dilatation.



Fig. 52.—Nasal Dilator and Epistaxis Instrument. (See next page.)



Nasal Dilator. (See preceding Page.)

These are constructed by fastening one of the small rubber bags accompanying our outfits to an elastic catheter as shown in the illustration (Fig. 52). After being introduced the bag can be dilated as desired. The more slender ones may be used for replacing and sustaining in position the turbanated bodies, while the medium oval ones are adapted for use as epistaxis instruments. For the latter purpose there is nothing better because the force employed is under the perfect control of the operator, while the soft rubber bag, will, when dilated conform to nearly if not all the inequalities of the nasal passages.

FOR DENTISTS' USE.



Fig. 54.—Dental Cuppers.



Fig. 56.—Saliva Washer.

This invention is adaptable to Dentists' use for aspirating, cupping alveola abscesses, continuous syringe and saliva evacuator. As an aspirator its work is perfect, and for this purpose two needles are supplied, one straight and one curved. The alveola cuppers are two in number, and are also curved and straight (see Fig. 54). The saliva evacuators are of the regular pattern in use by dentists and are furnished of either hard rubber or glass. When used for the latter purpose the patient can hold the pump in one hand (it being only three inches in diameter) and turn the crank with the other, thus freeing the saliva from the mouth as fast as it collects.

EMBALMING AND SUCTION SYRINGE.

To convert this into a perfect embalming instrument we furnish a trocar pointed evacuating tube (see Fig. 58), and suitable injection pipes (see Fig. 60).



Fig. 58.—Embalming Trocar.

As this pump works with much greater force than any other evacuating instrument, there is much less danger of the tube becoming clogged; however, should this occur the operator has only to give the crank one or two turns in



the opposite direction to free it at once. If the operator desires to thoroughly evacuate the fluid contents of the body he has only to make a single opening into the abdomen just above the umbilicus, through which he may reach with this trocar any organ or large intestine liable to contain fluid matter. The perforation of these parts should be made while an assistant is turning the crank so that the moment the point comes in contact with fluid matter, whether liquid or gaseous, it will be drawn through the canula and tube. The embalming fluid may be injected through the same trocar if desired, or the embalming pipes (see Fig. 60) may be used. These injection tubes are of



Fig. 60.—Hard Rubber Embalming Injection Pipes.

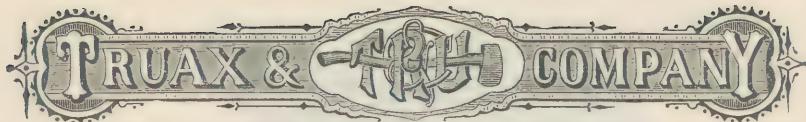
hard rubber, and as the instrument is without valves or other metal attachments there is but little to be destroyed by any corrosive fluid with which it may be brought in contact.

FORCE AND VACUUM PUMP.

The advantages of this apparatus as a force and vacuum pump are too clearly set forth in the foregoing pages to require further comment. It can safely be said to be the strongest, most simple, effective instrument in use, and can be used by the physician for more purposes than any device ever before placed in the hands of the medical profession.

VETERINARY USE.

The compactness of this pump renders it desirable for veterinary work, and for this use we supply an outfit furnished with stomach tube, catheter, syringe pipe and aspirating needles (see outfit No. 32). Its advantages for all of these uses are clearly set forth in the foregoing pages, and consequently need no repetition here.



IT IS ASEPTIC.

The instrument, for all of the above-mentioned purposes, is the only one in the market that can be made aseptic. It has little or no complicated machinery, and there is nothing about it liable to get out of order. Although the tube furnished is of superior quality, made expressly for this instrument, tubing that will answer all purposes may be procured at any good drug store.

EXTRA TUBE.

Each complete physicians' outfit is provided with an extra tube that may be connected with the old tube by means of the small attachment shown in



Fig. 62.

the illustration, and the new tube introduced without difficulty. This should be introduced more with a pushing than a pulling motion, for if pulled upon strongly, the operator may separate the tubes, as the connector is not intended to stand much of a strain. If preferred the purchaser may replace a tube by taking off the small nut and button on the back of the pump, and taking the case apart, when it may be slipped into place with ease.



Fig. 64.—Universal Couplings.

These couplings were first suggested to us by Col. J. W. Baxter, M.D., Chief Medical Purveyor, U. S. A., and are the ones mentioned in the recommendation of Mr. J. A. Marston, Deputy Surgeon General, British Army, on page 3 of this pamphlet. They will be found to fill all requirements and to facilitate the changing of one attachment to another.

SIZES OF PUMPS AND NET PRICES.

Pump No. 1.—Diameter of cylinder 3 inches, price of pump only.....	\$8 00
Pump No. 2.—Diameter of cylinder $3\frac{1}{2}$ inches, price of pump only.....	9 00

The above prices include one tube and a set of universal connectors.

If in case, like Fig. 71, extra.....	1 75
If in case, like Fig. 78, extra.....	5 00



Fig. 71.—Showing our \$15 Outfit.

Physicians' Outfit No. 10 (see Fig. 71), consisting of—

- | | |
|----------------------------------------------|------------------------------------------------------|
| 1 3½-inch Pump and Tube, Fig. 1; | 3 Aspirating Needles, Fig. 12; |
| 1 Clamp, to fasten to table, chair, etc.; | 2 Tampons, Fig. 14; |
| 1 set Universal Connectors, Fig. 64; | 1 Uterine Dilator, small, Fig. 17; |
| 1 Tube Connector, Fig. 62; | 1 Uterine Dilator, large, Fig. 16; |
| 1 Glass Copper, Fig. 6; | 2 Silk Covers for same; |
| 1 Connector and Cut-off for same,
Fig. 6; | 2 extra Rubber Bags, for tampons,
dilators, etc.; |
| 1 Stomach Tube and Connector, Fig. 9; | 1 Olive Tip Catheter and Connection. |

All in a neat velvet lined leather covered case (Fig. 71), net price, \$15 00

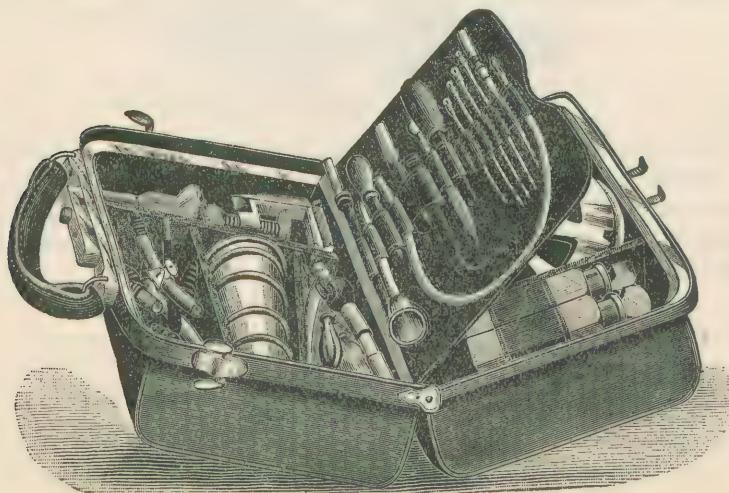
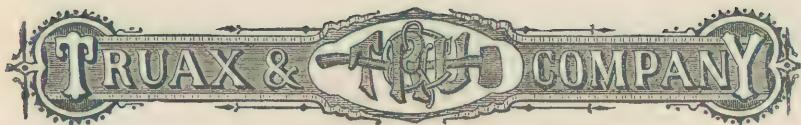


Fig. 73.—Showing Our \$25 Outfit.



Physician's Outfit No. 12, consisting of—

- | | |
|------------------------------------------------|-----------------------------------------------------------------------------|
| 1 3½-inch Pump and Tube, Fig. 1; | 1 Two-way Cock, for injecting, Fig. 10; |
| 1 extra Tube for same; | 2 Tampons, Fig. 14; |
| 1 Clamp, to fasten to table, chair, etc.; | 1 Uterine Dilator, small, Fig. 17; |
| 2 sets Universal Couplings, Fig. 64; | 1 Uterine Dilator, large, Fig. 16; |
| 1 Tube Connector, Fig. 62; | 4 Silk Covers for same; |
| 5 glass Cuppers, Fig. 6; | 4 extra Rubber Bags, for tampons, |
| 3 Connectors and Cut-offs for same,
Fig. 6; | dilators, etc.; |
| 1 Uterine Cupper, metal, Fig. 7; | 1 Olive Tip Catheter and Connector; |
| 1 Stomach Tube and Connector, Fig. 9; | 5 Syringe Pipes, Fig. 28 (ear, post
nasal, vaginal, rectal and uterine); |
| 1 Dome Trocar, Fig. 11; | 1 Breast Pipe. |
| 4 Aspirating Needles, Fig. 12; | |

All in a neat, velvet lined leather bag, with lock and key, as shown by Fig. 73 (see preceding page) \$25 00

The above outfit contains nine sets of instruments, each one of which is more perfect, and possesses greater advantages than any one instrument of its class to be purchased elsewhere. In other words, a physician may purchase the nine best instruments for these several operations to be found in the market, and will find on comparison that this one outfit is a better one for not only one but all of the various operations for which it is recommended than the entire nine; and these nine cannot be purchased for less than six times the sum asked for this one set.

Gynecological Outfit No. 13, consisting of—

- | | |
|-------------------------------------------------|------------------------------------------------------------|
| 1 3½-inch Pump and Tube, Fig. 1; | 3 curved Dome Trocars, Fig. 42; |
| 2 extra Tubes for same; | 3 Emmett's Trocars, Fig. 44; |
| 1 Clamp, to fasten to table, chair, etc.; | 2 Tampons, Fig. 14; |
| 3 sets Universal Connectors, Fig. 64; | 1 Uterine Dilator, small, Fig. 17; |
| 2 Tube Connectors, Fig. 62; | 1 Uterine Dilator, large, Fig. 16; |
| 2 glass Cuppers, Fig. 6; | 5 Silk Covers for same; |
| 2 Connectors for same, Fig. 6; | 6 extra Rubber Bags, for tampons, |
| 1 metal Uterine Cupper, Fig. 7; | dilators, etc.; |
| 4 Aspirating Needles, Fig. 12; | 2 Olive Tip Catheters and Connectors; |
| 1 Dome Trocar, Fig. 11; | 3 Syringe Pipes (uterine, vaginal and
rectal), Fig. 28; |
| 1 Two-way Stop-Cock, for injecting,
Fig. 10; | 1 Uterine Douche, Fig. 46. |

All in a neat, velvet lined leather bag, similar to Fig. 73 \$45 00



Hospital Outfit No. 14, consisting of—

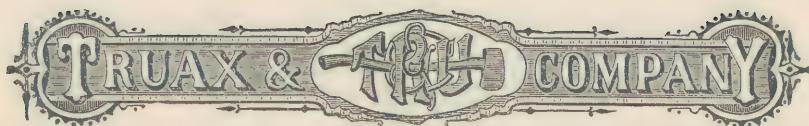
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|-----------------------------------------------|---------------------------------------------|
| 1 $3\frac{1}{2}$ -inch Pump and Tube, Fig. 1; | 1 Uterine Dilator, large, Fig. 16; |
| 2 extra Tubes for same; | 5 Silk Covers for same; |
| 1 Clamp, to fasten to table, chair, etc.; | 6 extra Rubber Bags, for dilators, |
| 3 sets Universal Connectors, Fig. 64; | tampons, etc.; |
| 2 Tube Connectors, Fig. 62; | 2 Olive Tip Catheters and Connectors; |
| 5 glass Cuppers, Fig. 6; | 5 Syringe Pipes, Fig. 23 (ear, post |
| 3 Connectors and Cut-off for same, | nasal, rectal, vaginal and uterine); |
| Fig. 6; | 1 Breast Pipe; |
| 1 Uterine Copper, metal, Fig. 7; | 1 $2\frac{1}{2}$ -inch Transfusion Pump and |
| 1 Stomach Tube and Connector, Fig. 9; | Tube; |
| 3 Aspirating Trocars and Stop-Cock, | 2 hard rubber Transfusion Canulas, |
| Fig. 40; | Fig. 26; |
| 2 Aspirating Needles, Fig. 12; | 1 Canula Pin, Fig. 26; |
| 1 large curved Dome Trocar, Fig. 42; | 1 Phlebotome, Fig. 27; |
| 1 Two-way Cock, for injecting, Fig. 10; | 1 Rectal Obturator and Injector, |
| 2 Tampons, Fig. 14; | Fig. 28. |
| 1 Uterine Dilator, small, Fig. 17; | |

All in a neat, velvet lined, leather bag, with lock and key, similar to Fig. 78 \$50 00

Hospital Outfit No. 15, consisting of—

- | | |
|-----------------------------------------------|---------------------------------------------|
| 1 $3\frac{1}{2}$ -inch Pump and Tube, Fig. 1; | 2 Olive Tip Catheters and Connec- |
| 2 extra Tubes for same; | tors; |
| 1 Clamp, to fasten to table, chair, etc.; | 5 Syringe Pipes, Fig. 23 (ear, post |
| 3 sets Universal Connectors, Fig. 64; | nasal, uterine, vaginal and rectal); |
| 2 Tube Connectors, Fig. 62; | 1 Breast Pipe; |
| 5 glass Cuppers, Fig. 6; | 1 $2\frac{1}{2}$ -inch Transfusion Pump and |
| 1 Uterine Copper, metal, Fig. 7; | Tube; |
| 3 Connectors and Cut-offs, for cup- | 2 hard rubber Transfusion Canulas, |
| pers, Fig. 6; | Fig. 26; |
| 1 Stomach Tube and Connector, Fig. 9; | 1 Canula Pin, Fig. 26; |
| 2 Aspirating Needles, Fig. 12; | 1 Phlebotome, Fig. 27; |
| 3 Aspirating Trocars and Stop-Cock, | 1 Rectal Obturator and Injector, |
| Fig. 40; | Fig. 28; |
| 2 Emmett's Trocars, large and me- | 1 Water Bag for chest, Fig. 30; |
| dium, Fig. 44; | 1 Water Bag for abdomen, Fig. 30; |
| 2 curved Dome Trocars, large and | 1 Water Bag for spine, Fig. 36, |
| small, Fig. 42; | 1 Water Bag for neck, Fig. 34; |
| 1 Two-way Cock, for injecting, Fig. 10; | 1 Water Bag for head, Fig. 38; |
| 2 Tampons, Fig. 14; | 1 Uterine Douche, Fig. 46; |
| 1 Uterine Dilator, small, Fig. 17; | 1 Esophageal Dilator, Fig. 48; |
| 1 Uterine Dilator, large, Fig. 16; | 1 Trachea Dilator, Fig. 50; |
| 5 Silk Covers for same; | 1 Nasal Dilator, Fig. 52. |
| 6 extra Rubber Bags, for dilators, | |
| tampons, etc.; | |

All in a neat, velvet lined, leather Bag, similar to Fig. 78 \$85 00



Walter A. Reid's British Naval Case, consisting of—

1 $3\frac{1}{2}$ -inch Pump and Tube, Fig. 1;	2 Aspirating Needles, Fig. 12;
2 extra Tubes for same;	3 Aspirating Trocars, gold-plated, with
1 Clamp, to fasten to table, chair, etc.;	Stop-Cock, Fig. 40;
3 sets Universal Connectors, Fig. 64;	1 brass Two-way Cock, for injector, Fig. 10;
2 Tube Connectors, Fig. 62;	2 Tampons, Fig. 14;
3 glass Coppers, Fig. 6;	1 Rectal Dilator, Fig. 16;
2 Connectors and Cut-offs for same, Fig. 6;	4 extra Rubber Bags, for dilators, tampons, etc.;
1 Stomach Tube (without varnish) and Connector, Fig. 9;	2 Olive Tip Catheters and Connectors;
All in a velvet lined heavy sole leather case, with handle, lock and key.....	1 Rectal Syringe Pipe, Fig. 23.
	\$30 00

Outfit No. 16. Blood Transfuser, consisting of 1 $2\frac{1}{2}$ -inch Pump with suitable Tube; 2 hard rubber Canulas, Fig. 26; 1 canula Pin, Fig. 26, and 1 Phlebotome, Fig. 27. All in a neat, velvet lined case \$15 00

Outfit No. 18. Embalming Syringe—consisting of a No. 2 Pump; 1 Jointed Evacuating Trocar, Fig. 58; 3 Injection Pipes, Fig. 60; 1 set Universal Connectors, Fig. 64. All in a neat, velvet lined case \$13 00

Outfit No. 19. Embalming Syringe—consisting of a No. 2 Pump; 1 Jointed Evacuating Trocar, Fig. 58; 3 Injection Pipes, No. 60; 1 Catheter; 2 Scalpels; 1 Dissecting Forcep; 1 Dissecting Scissors; 1 Artery Needle; 1 set Universal Connectors, Fig. 64. All in neat, velvet lined case \$15 00

Outfit No. 21. (Aspirator only). Containing a No. 1 Pump; 3 Aspirating Needles, Fig. 12, with 1 set Universal Connectors, Fig. 64. In neat, velvet lined, leather covered case \$10 00

Outfit No. 23. (Stomach Pump only). Containing a No. 2 Pump; 1 Stomach Tube, with 1 set Universal Connectors. In neat, velvet lined leather covered case \$11 00

Outfit No. 25. (Cupping Pump only.) Containing a No. 1 Pump with 4 Coppers, Fig. 6, each with suitable cut-off and connections. \$10 00

Outfit No. 26. Laryngological—consisting of 1 $3\frac{1}{2}$ -inch Pump, Fig. 1; 1 Oesophageal Dilator, Fig. 48; 1 Trachea Dilator, Fig. 50; 1 Nasal Dilator, Fig. 52; 2 Aspirating Needles, Fig. 12; 6 extra Rubber Bags for dilators; Clamp and Tube Connector. All in a neat, velvet lined case \$14 50

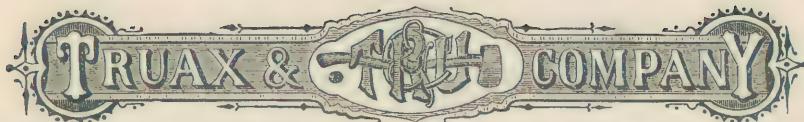
Outfit No. 27. Dental—consisting of a No. 1 Pump; 3 glass Saliva Tubes, Fig. 56, with suitable Connector; 2 hard rubber Alveola Coppers, Fig. 54, and 1 Aspirating Needle. \$12 50

Outfit No. 32. Veterinary—consisting of 1 4-inch Pump, with extra heavy tubing; 1 extra Tube for same; 1 Clamp; 1 set Connectors; 2 Aspirating Needles; 1 Dome Trocar; 1 Catheter; 1 Injection Pipe and 1 Horse Stomach Tube. In a neat serviceable hand bag..... \$20 00



PRICES OF EXTRAS.

Aspirating Attachment, Fig. 10, complete	each, \$1 25
Aspirating Needles, Fig. 12	" 75
Aspirating Trocars, with stop-cock, nickel plated, Fig. 40	" 3 50
" " " " gold plated	" 4 00
" " set of 3, with 1 stop-cock, nickel plated	" 8 00
" " 3, " 1 " gold plated	" 9 00
" " Dome pointed, Fig. 11	" 2 25
" " " curved, small, Fig. 42	" 4 00
" " " " medium	" 5 00
" " " " large	" 6 00
" " Emmett's, small, Fig. 41	" 2 75
" " " " medium	" 3 00
" " " " large	" 3 25
Bags, Hot and Cold Water, Chest, Fig. 30	" 2 75
" " " " Abdominal, Fig. 30	" 3 00
" " " " Spinal, Fig. 36	" 2 40
" " " " Neck, Fig. 34	" 1 75
" " " " Head, Fig. 38	" 4 00
Breast Pipes, plain	" 15
Catheters, olive pointed, best	" 50
Couplings, Universal, hard rubber, per set, Fig. 64	" 85
Each piece	" 20
Connectors for Cuppers, consisting of piece of tubing, hard rubber fitting and cut-off, Fig. 6	" 85
Cuppers, glass, Fig. 6	" 15
Cuppers, Uterine, metal, Fig. 7	" 75
Dental Cuppers, Alveola, Fig. 54	" 75
Dental Saliva Tubes, glass, Fig. 56	" 50
" " " hard rubber	" 75
Dilators, Uterine, large, Fig. 17	" 50
" " Fig. 16	" 1 00
" Urethral, Fig. 19	" 1 00
Silk Covers for same	" 10
" Esophageal, Fig. 48	" 75
" Trachea, Fig. 50	" 2 00
" Nasal, Fig. 52	" 1 00
Douche, Uterine, Fig. 46	" 2 00



Embalming Trocars, Fig. 58.....	each, \$2 00
" Pipes for Injecting, Fig. 60, set	" 1 50
Rubber Bags, small, for Dilators	" 05
" large, for Tampons, Dilators, etc.	" 10
Rectal Injector and Obturator, Fig. 28	" 3 00
Stop-Cocks, Two-Way, for Aspirator, Fig. 10	" 1 00
Stomach Tubes (extra quality) and fitting, Fig. 9	" 1 50
Syringe Pipes, Rectal and Vaginal, Fig. 23.....	" 20
" Ear and Uterine, Fig. 23.....	" 30
" Post Nasal, Fig. 23.....	" 35
Tampons, complete, Fig. 14	" 25
Thermometers, for Water Bags	" 1 00
Transfusion Canulas, Fig. 26	" 75
" Canula Pin, Fig. 26.....	" 75
" Phlebotome, Fig. 27.....	" 75
Tubes, Rubber, for No. 1 Pump	" 40
" " " 2 "	" 50
Veterinary Injection Pipe	" 1 00
" Stomach Tube	" 5 00
" " " extra length.....	" 6 00
" Catheter, best.....	" 2 00

Among the many who are provided with the Allen Surgical Pumps, we take pleasure in referring to the following:—

- SIR JOSEPH LISTER, Bart..... Prof. Clin. Surgery, King's College, London.
- SIR SPENCER WELLS, Bart..... Surgeon to the Queen's Household, "
- SIR THOMAS LONGMORE Prof. Mil. Surg. Army Med. School, Netley.
- SIR WILLIAM MACCORMAC Surgeon to St. Thomas Hospital, London.
- SIR GEO. H. B. MCLEOD..... Reg. Prof. Surg., Univ., Glasgow.
- MR. THOMAS ANNANDALE Reg. Prof. Clin. Surg., Univ., Edinburgh.
- MR. LAWSON TAIT Ex-Pres. British Gyn. Society, Birmingham.
- J. A. MARSTON, M.D. Deputy Surgeon General, London.
- B. W. RICHARDSON, M.D. Editor "Asclepiad," London.
- G. GRANVILLE BANTOCK, M.D. Pres. British Gyn. Society, London.
- W. LEISHMAN, M.D. Reg. Prof. Midwifery, Univ., Glasgow.



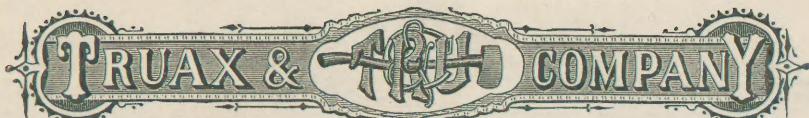
W. L. REID, M.D.	Ex-Pres. Glasgow Ob. & Gyn. Society, Glasgow.
A. WALLACE, M.D.	Prof. Dis. of Women, Anderson's Col., Glasgow.
WARD COUSINS, M.D.	Sen. Surg. Royal Hospital, Portsmouth.
MR. W. PAUL SWAIN	Surg. to Devonshire Hospital, Plymouth.
MR. A. J. PEPPER	Surgeon to St. Mary's Hospital, London.
MR. W. A. MEREDITH	Surgeon to Samaritan Hospital, London.
MR. VICTOR HORSLEY	Assist. Surg. Univ. College Hospital, London.
MR. CHAS. FASSEN	Deputy Surg. General, Edinburgh.
MR. R. POLLOK	Surg. Anderson's College Disp., Glasgow.
JOHN MOORE, M.D.	Surg. Gen'l, United States Army. ·
J. B. HAMILTON, M.D.	Surg. Gen'l, Marine Hospital Service.
COL. J. W. BAXTER, M.D.	Chief Med. Purveyor, United States Army.
W. W. DAWSON, M.D.	Pres. Am. Med. Association, 1888-9.
ALEX. J. C. SKENE, M.D.	Dean, Long Island Med. Col., Brooklyn.
T. GAILLARD THOMAS, M.D.	Prof. Dis. of Women, Col. Phy. Surg., N. Y.
T. ADDIS EMMETT, M. D.	Surg. to Woman's Hospital, New York.
HORACE T. HANKS, M.D.	Prof. Dis. Women, Post-Grad. School, N. Y.
A. L. LOOMIS, M.D.	Prof. Prin. and Pract., Univ. Med. Col., N. Y.
BACHE McE. EMMETT, M.D.	Prof. Dis. Women, Post-Grad. School, N. Y.
ALEXANDER MOTT, M.D.	Prof. Surg., Bellevue Hospital, Med. Col.
WILLIAM TODD HELMUTH, M.D.	Prof. Surg., Homo. Med. Col., New York.
ROBERT ABBE, M.D.	Prof. Surg., Post-Grad. School, New York.
H. MARION SIMS, M.D.	Prof. Gyn., New York Poly.
DANIEL LEWIS, M.D.	Pres. New York Co. Med. Soc.
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V. P. GIBNEY, M.D.	Prof. Orthopedic Surg., N. Y. Poly. Clinic.
F. E. DOUGHTY, M.D.	Prof. Genito-Urin. Dis., Homo. Med. Col., N.Y
J. D. BRYANT, M.D.	Prof. Anatomy, Bellevue Med. Col., and Surg. Gen'l for the State of New York.
L. BOLTON BANGS, M.D.	Prof. Genito-Urinary Dis., Col. P. & S., N. Y.
GRACE PECKHAM, M.D.	Asst. Chair Gyn., Women's Col., New York.



H. C. HOUGHTON, M.D.	Prof. Otology and Dis. of Throat, Homo. Med. Col., New York.
E. M. CUSHIER, M.D.	Asst. Obst., Woman's Med. Col., New York.
E. BLACKWELL, M.D.	Emeritus Prof. Obst., Woman's Med. Col., New York.
E. LEFEVRE, M.D.	Asst. Practice, University, New York.
GRAEME M. HAMMOND, M.D.	New York.
JAS. B. HUNTER, M.D.	New York.
A. VANDERVEER, M.D.	Prof. Surg., Albany Med. Col.
L. BALCH, M.D.	Sec. N. Y. State Board of Health.
S. R. MORROW, M.D.	Asst. Surgery, Albany Med. Col.
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H. A. DIDIMA, M.D.	Prof. Prin. and Prac., Med. Syracuse Univ.
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E. H. HOWARD, M.D.	Supt. Monroe Co. Insane Asylum, Rochester.
D. W. HARRINGTON, M.D.	Consulting Surg. Buffalo Gen. Hospital.
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CHAS. T. PARKES, M.D.	Prof. Surgery, Rush Med. Col., Chicago, Ill.
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N. SCHNEIDER, M.D.	Prof. Surg., Homo. Med. Col., Cleveland.
JOHN BENNITT, M.D.	Prof. Practice, Western Reserve Med. Col., Cleveland, Ohio.



G. C. ASHMAN, M.D.	Health Officer, Cleveland, Ohio.
J. W. CLEMMER, M.D.	Surg. Ohio State Penitentiary, Columbus, O.
D. TODD GILLIAN, M.D.	Prof., Starling Med. Col., Columbus, O.
THOMAS HOOVER, M.D.	Prof. Operative Surg., Starling Med. Col., Columbus, Ohio.
C. M. FINCH, M. D.	Supt, Columbus Insane Asylum.
W. W. POTTER, M.D.	Sec. American Assn. Gyn. and Obstetricians.
J. A. LARRABEE, M.D.	Prof. Surg., Louisville Med. Col.
S. S. THORN, M.D.	Prof., Toledo Med. Col.
C. A. KIRKLEY, M.D.	Prof., Toledo Med. Col.
H. F. BIGGAR, M.D.	Prof. Gyn., Homo. Med. Col., Cleveland, Ohio.
H. H. POWELL, M.D.	Prof. Obst., Western Reserve Med. Col., Cleveland, Ohio.
G. J. JONES, M.D.	Prof. Surg., Homo. Med. Col., Cleveland, O.
FRANK J. WEED, M.D.	Prof. Surg., Wooster Univ., Cleveland, Ohio.
P. W. SAWYER, M.D.	Prof. Obst., Wooster Univ., Cleveland, Ohio.
H. TUHOLSKE, M.D.	Prof. Surg. and Genito-Urinary Dis., Missouri Med. Col., St. Louis.
T. F. PREWITT, M.D.	Prof. Surg., Missouri Med. Col., St. Louis.
W. B. OUTTEN, M.D.	Prof. Surg., Beaumont Med. Col., St. Louis, and Chief Surg., Missouri Pac. R. R.
WALDO BRIGGS, M.D.	Prof. Clin. Surg., Beaumont Med. Col., St. Louis.
F. J. LUTZ, M.D.	Prof. Operative Surg., Beaumont Med. Col., St. Louis.
W. E. FISCHELL, M.D.	Prof. Materia Med. and Clin. Med., St. Louis Med. Col.
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YOUNG H. BOND, M.D.	St. Louis, Mo.
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GEORGE HALLEY, M.D.	Prof., Kansas City Med. Col., Kansas City, Mo.
JACOB GEIGER, M.D.	Prof. Surg., Ensworth Med. Col., St. Joseph, Mo.
T. E. POTTER, M.D.	Prof. Surg., Northwestern Med. Col., St. Joseph, Mo.
D. J. HOLLAND, M.D.	Res. Surg., Missouri Pac. and Santa Fe Railways, Atchison, Kans.
W. G. VAN EMAN, M.D.	Leavenworth, Kans.
W. W. WALTER, M.D.	Leavenworth, Kans.



A. H. FRABRIQUE, M.D.	Wichita, Kans.
G. M. BIBBEE, M.D.	Wichita, Nans.
C. C. CLEMENTS, M.D.	Springfield, Mo.
Wm. REINHOFF, M.D.	Springfield, Mo.
J. C. HEARNE, M.D.	Chief Surg., Hannibal & St. Jos. R. R., and Res. Surg., Mo. Pac. R'y, Hannibal, Mo.
D. W. YANDELL, M.D.	Prof. Surg., Univ. of Louisville, Louisville, Ky.
THOS. HUNT STUCKY, M.D.	Prof. Surg., Hospital Col. Med., Louisville, Ky.
H. H. GRANT, M.D.	Prof. Surg., Ky. School of Med., Louisville, Ky.
A. M. CARTLEDGE, M.D.	Prof. Demonstrative Anatomy, Ky. School of Medicine, Louisville, Ky.
JNO. A. LARRABEE, M.D.	Prof. Materia Med. and Diseases of Children Hospital Col. Med., Louisville, Ky.

7, THE CRESCENT, BIRMINGHAM, July 30th, 1888.

"The Allen Surgical Pump is certainly a most ingenious and clever apparatus. I have mastered the details of the attachments and highly appreciate them."—LAWSON TAIT.

THE PADDOCK, WOOLSTONE, August 23d, 1888.

"I think the Allen Surgical Pump very ingenious and useful, and the instrument capable of being applied with advantage to a great variety of surgical purposes."—SIR THOMAS LONGMORE.

UNIVERSITY OF GLASGOW, Sept. 1st, 1888.

"The Allen Surgical Pump is a most ingenious piece of mechanism, and promises, from the many uses to which it can be put, to be of the utmost value to the profession."—SIR GEO. H. B. McCLEOD, M.D., Reg. Prof. Surgery and Surgeon in Ordinary to the Queen. (Extract from a letter.)

PORTSMOUTH, Sept. 6th, 1888.

"I consider the Allen Surgical Pump the most ingenious invention exhibited this year at the Annual Meeting of the British Medical Association. From a mechanical point of view the instrument is perfect, and for many surgical purposes, it presents extraordinary advantages."—JOHN WARD COUSINS, M.D., LOND., F.R.C.S., Senior Surgeon to Royal Portsmouth Hospital.

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R. POLLOK.

TRUAX & Co.,

Dear Sirs:—The Surgical Pump which I purchased of you some time ago has fulfilled all my expectations and met all my requirements. I have used it for a variety of indications and have been much pleased with its workings.

(Extract from a letter.)

NEW YORK, Feb. 18, 1889.

Truly yours,

BACHE MCEMMETT, M.D.

56 NEVERN SQUARE, SOUTH KENSINGTON, LONDON, Aug. 20, 1888.

What I have said and done regarding the Surgical Pump was entirely on its merits.

J. A. MARSTON,

Dep'ty Surg. Gen'l (British Army).

(Extract from a letter.)



C. TRUAX & Co.,

Gentlemen:—The Allen Surgical Pump differs entirely from the great majority of surgical instruments that have been brought to my notice, in this respect, that it not only fulfills all my requirements, but is also worthy of more credit than you claim for it. Higher commendation I cannot possibly give.

(Extract from a letter.)

BROOKLYN, April 23, 1888.

Very sincerely,

ALEX. J. C. SKENE, M. D.

CHAS. TRUAX & Co.,

Dear Sirs:—The Surgical Pump which was left with me by your agent, has proved very useful in many instances, and I take pleasure in recommending it. I am using it constantly.

(Extract from a letter.)

62 MADISON AVE., NEW YORK, March 26, 1889.

Very truly yours, ALEX. B. MOTT, M.D.,
Prof. of Clinical and Oper. Surgery, Bell. Med. Col.

ROYAL NAVAL HOSPITAL, HASLER, GOSPORT, ENGLAND, Oct. 5, 1888.

CHARLES TRUAX & Co.,

Dear Sirs:—Both the Allen Surgical Pumps are in daily use at this Hospital and work admirably. I cannot think of anything else to make the Naval Case more perfect.

(Extract from a letter.)

WALTER REID, Fleet Surgeon, R. N.

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Gentlemen:—The "Allen" Pump arrived in good condition, and I have had occasion to test its merits practically. The more I use it the more I believe it is a great addition to the armamentarium of the practical surgeon. The man who invented it ought to have been himself a surgeon so that the "glory" would have belonged to the craft. I am, etc.,

DONALD MACLEAN.

"We can scarcely speak too highly of the apparatus before us. It is a marvel of the scientific application of mechanism to surgery. We predict for it a very general, if not a universal employment in the profession."—*The Lancet*, August 4th, 1888.

"At the Obstetrical Section (British Medical Association), a demonstration of the uses of the Allen Surgical Pump was given by Mr. Charles Truax, of Chicago, who briefly but clearly showed how, by the use of his improved attachments, this simple instrument could be used successfully for a great many different purposes. Many of his demonstrations elicited considerable applause."—*British Medical Journal*, August 25th, 1888.

"One of the best things exhibited at the American Medical Congress (1887), was this invention. As this very useful and ingenious invention is capable of fulfilling so many purposes for each of which at the present time a separate instrument has to be provided, it should prove an eminently useful appliance for Army purposes; indeed, speaking from my own personal knowledge of it, I do not see what further provision a surgeon would require to meet all the ordinary and some even of the extraordinary requirements of practice."—(Signed) J. A. MARSTON, Deputy Surgeon General. (Official Report as Army Medical Delegate.)

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